



#6

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Yao Yiming et al.

Serial No.: 09/585,166

Art Unit:

Filed: June 1, 2000

Examiner:

For: Non-Homogeneous Systems for the Resolution of Enantiomeric Mixtures

Assistant Commissioner for Patents
Box IDS
Washington, DC 20231

June 8, 2001

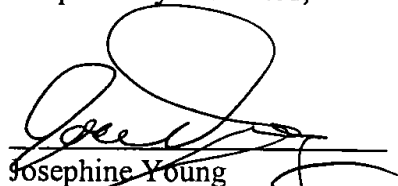
Transmittal of Information Disclosure Statement

Sir:

Pursuant to the duty of disclosure under 37 CFR §§ 1.56, 1.97 and 1.98, Applicants cite the publications listed on the accompanying PTO-1449. Copies of all listed references are enclosed.

Please charge any requisite fees associated with this paper to Deposit Account No. 11-0980.

Respectfully submitted,


Josephine Young
Provisional Reg. No. P-48,308

KING & SPALDING
191 Peachtree Street
Atlanta, GA 30303
404-572-2882 (Telephone)
404-572-5145 (Facsimile)

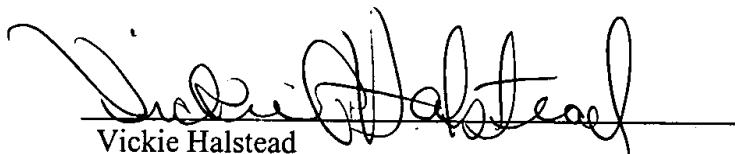


1744

INFORMATION DISCLOSURE STATEMENT
U.S.S.N. 09/585,166
Filed June 1, 2000
Docket No. 04674.105060 (ALTUS)

CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this Information Disclosure Statement, along with any paper referred to as being attached or enclosed, is being deposited with the United States Postal Service on the date shown below with sufficient postage as first-class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.


Vickie Halstead

Date: June 8, 2001

RECEIVED
JUN 18 2001
TC 1700

Please type a plus sign (+) inside this box

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	09/585,166
Filing Date	June 1, 2000
First Named Inventor	Yao Yiming <i>et al.</i>
Group Art Unit	
Examiner Name	
Attorney Docket Number	04674.105060 (ALTUS)

Sheet 1 of 5

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	AA	4,800,162		Matson	01-24-1989	
	AB	5,041,449		Belleau <i>et al.</i>	08-20-1991	
	AC	5,047,407		Belleau <i>et al.</i>	09-10-1991	
	AD	5,057,427		Wald <i>et al.</i>	10-15-1991	
	AE	5,204,466		Liotta <i>et al.</i>	04-20-1993	
	AF	5,210,085		Liotta <i>et al.</i>	05-11-1993	
	AG	5,248,776		Chu <i>et al.</i>	09-28-1993	
	AH	5,276,151		Liotta	01-04-1994	
	AI	5,466,806		Belleau <i>et al.</i>	11-14-1995	
	AJ	5,486,520		Belleau <i>et al.</i>	01-23-1996	
	AK	5,538,975		Dionne	07-23-1996	
	AL	5,539,116		Liotta <i>et al.</i>	07-23-1996	
	AM	5,587,480		Belleau <i>et al.</i>	12-24-1996	
	AN	5,618,820		Dionne	04-08-1997	
	AO	5,663,320		Mansour <i>et al.</i>	09-02-1997	
	AP	5,684,164		Belleau <i>et al.</i>	11-04-1997	
	AQ	5,693,787		Mansour <i>et al.</i>	12-02-1997	
	AR	5,696,254		Mansour <i>et al.</i>	12-09-1997	
	AS	5,700,937		Liotta <i>et al.</i>	12-23-1997	
	AT	5,728,575		Liotta <i>et al.</i>	03-17-1998	
	AU	5,744,596		Mansour <i>et al.</i>	04-28-1998	
	AV	5,756,706		Mansour <i>et al.</i>	05-26-1998	
	AW	5,763,606		Mansour <i>et al.</i>	06-09-1998	
	AX	5,814,639		Liotta <i>et al.</i>	09-29-1998	
	AY	5,827,727		Liotta <i>et al.</i>	10-27-1998	
	AZ	5,892,025		Liotta <i>et al.</i>	04-06-1999	
	AAA	5,914,331		Liotta <i>et al.</i>	06-22-1999	

RECEIVED
JUN 18 2001
TC 1

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet **2** of **5**

Complete if Known

Application Number	09/585,166
Filing Date	June 1, 2000
First Named Inventor	Yao Yiming <i>et al.</i>
Group Art Unit	
Examiner Name	
Attorney Docket Number	04674.105060 (ALTUS)

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	BA	5,914,400		Liotta <i>et al.</i>	06-22-1999	
	BB	5,922,867		Mansour <i>et al.</i>	07-13-1999	

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number	Kind Code ² (if known)				
	BC	WO	91/11186	A1	Emory University	08-08-1991		
	BD	WO	91/17159	A1	IAF BioChem Internatl	11-14-1991		
	BE	WO	92/02617	A1	Vertex Pharmaceuticals	02-20-1992		
	BF	WO	92/14743	A2	Emory University	09-03-1992		
	BG	WO	92/15308	A1	Wellcome Foundation	09-17-1992		
	BH	WO	92/15309	A1	Wellcome Foundation	09-17-1992		
	BI	WO	92/18517	A1	Yale University <i>et al.</i>	10-29-1992		
	BJ	WO	94/09793	A1	Emory University	05-11-1994		
	BK	WO	96/30369	A1	Wellcome Foundation	10-03-1996		
	BL	WO	97/44445	A1	Altus Biologics	11-27-1997		
	BM	WO	98/46732	A1	Altus Biologics	10-22-1998		
	BN	EP	0 337 713	A2	IAF BioChem Internatl	10-18-1989		
	BO	EP	0 382 526	A2	IAF BioChem Internatl	08-16-1990		
	BP	EP	0 513 200	B1	Emory University	09-09-1998		
	BQ	EP	0 515 144	A1	BioChem Pharma	11-25-1992		
	BR	EP	0 515 156	A1	BioChem Pharma	11-25-1992		
	BS	EP	0 526 253	A1	BioChem Pharma	02-03-1993		
	BT	EP	0 711 771	A2	BioChem Pharma	05-15-1996		
	BU	EP	0 872 237	A1	Emory University	10-21-1998		
	BV	JP	08092269a		Izumi	04-09-1996		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	09/585,166
				Filing Date	June 1, 2000
				First Named Inventor	Yao Yiming <i>et al.</i>
				Group Art Unit	
				Examiner Name	
Sheet	3	of	5	Attorney Docket Number	04674.105060 (ALTUS)

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	CA	ARIENTE-FLICHE <i>et al.</i> , "How to Synthesize Easily Dimethyl (2R) and (2S)-Formylcyclopropane-1,1-Dicarboxylate, a Precursor of a Wide Variety of Substituted Aminocyclopropanecarboxylic Acids," <i>Synth. Commun.</i> 1992 , 22 (8), 1149-1153.	
	CB	BASAVAIAH <i>et al.</i> , "Enantioselective synthesis using crude enzymes," <i>Pure and Appl. Chem.</i> , 1992 , 64 (8), 1067-1072.	
	CC	BASAVAIAH <i>et al.</i> , "Enantioselective Synthesis of (1R,2R)- and (1S,2S)-2-Nitroxycyclohexan-1-ols," <i>Tetrahedron: Asymmetry</i> , 1996 , 7 (1), 13-16.	
	CD	BELLEAU <i>et al.</i> , "Oxidative Degradation of L-Ascorbic Acid Acetals to 2',3'-Dideoxy-3'-Oxaribofuranoside. Synthesis of Enantiomerically Pure 2',3'-Dideoxy-3'-Oxacytidine Stereoisomers as Potential Antiviral Agents," <i>Tetrahedron Letters</i> , 1992 , 33 (46), 6949-6952.	
	CE	CHOI <i>et al.</i> , "In Situ Complexation Directs the Stereochemistry of N-Glycosylation in the Synthesis of Oxathiolanyl and Dioxolanyl Nucleoside Analogues," <i>J. Am. Chem. Soc.</i> , 1991 , 113 (24), 9377-9379.	
	CF	DAVIES <i>et al.</i> , "Biotransformations in Preparative Organic Chemistry. The Use of Isolated Enzymes and Whole Cell Systems in Synthesis," Academic Press: London, 1989 , pp. 10, 25, 37, 43, 50, 76.	
	CG	DU <i>et al.</i> , "Asymmetric Synthesis of Oxazolidine Nucleosides and Related Chemistry," <i>Nucleosides and Nucleotides</i> , 1998 , 17 (1-3), 1-13.	
	CH	HOONG <i>et al.</i> , "Enzyme Mediated Enantioselective Preparation of Pure Enantiomers of the Antiviral Agent 2',3'-Dideoxy-5-fluoro-3'-thiacytidine (FTC) and Related Compounds," <i>J. Org. Chem.</i> , 1992 , 57, 5563-5565.	
	CI	HULTIN <i>et al.</i> , "Dilemma Regarding an Active Site Model for Porcine Pancreatic Lipase," <i>Tetrahedron Letters</i> , 1992 , 33 (11), 1399-1402.	
	CJ	JONES, "Enzymes in Organic Synthesis," <i>Tetrahedron</i> , 1986 , 42 (13), 3351-3403.	
	CK	JONES, "Illustrative Examples of Enzymes in Organic Synthesis," 1986 , 3-14.	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	09/585,166
				Filing Date	June 1, 2000
				First Named Inventor	Yao Yiming <i>et al.</i>
				Group Art Unit	
				Examiner Name	
Sheet	4	of	5	Attorney Docket Number	04674.105060 (ALTUS)

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	DA	JONES, "Probing the specificity of synthetically useful enzymes," <i>Can. J. Chem.</i> , 1993, 71, 1273-1282.	
	DB	KRAUS <i>et al.</i> , "Synthesis of New 2,5-Substituted 1,3-Oxathiolanes. Intermediates in Nucleoside Chemistry," <i>Synthesis</i> , November 1991, 1046-1048.	
	DC	LANLONDE <i>et al.</i> , "Cross-Linked Crystals of <i>Candida rugosa</i> Lipase: Highly Efficient Catalysts for the Resolution of Chiral Esters," <i>J. Am. Chem. Soc.</i> , 1995, 117 (26), 6845-6852.	
	DD	MAHMOUDIAN <i>et al.</i> , "Resolution of 4-amino-cyclopentanecarboxylic acid methyl esters using hydrolytic enzymes," <i>Enzyme and Microbial Technology</i> , 1992, 14, 911-916.	
	DE	MCINTOSH <i>et al.</i> , "2 Mercaptoaldehyde dimers and 2,5-dihydrothiophenes from 1,3-oxathiolan-5-ones," <i>Can. J. Chem.</i> , 1983, 61, 1872-1875.	
	DF	MILTON <i>et al.</i> , "Enzymatic Resolution of α -Acetoxysulfides: A New Approach to the Synthesis of Homochiral S,O-Acetals," <i>Tetrahedron: Asymmetry</i> , 1995, 6 (8), 1903-1906.	
	DG	NORBECK <i>et al.</i> , "A New 2',3'-Dideoxynucleoside Prototype with <i>In Vitro</i> Activity Against HIV," <i>Tetrahedron Letters</i> , 1989, 30 (46), 6263-6266.	
	DH	OHNO <i>et al.</i> , "Chiral Synthons by Ester Hydrolysis Catalyzed by Pig Liver Esterase," <i>Organic Reactions</i> , 1989, 37, 1-55.	
	DI	PROVENCHER <i>et al.</i> , "Enzymes in Organic Synthesis 51. Probing the Dimensions of the Large Hydrophobic Pocket of the Active Site of Pig Liver Esterase," <i>Tetrahedron: Asymmetry</i> , 1993, 4 (9), 2025-2040.	
	DJ	PROVENCHER <i>et al.</i> , "A Concluding Specification of the Dimensions of the Active Site Model of Pig Liver Esterase," <i>J. Org. Chem.</i> , 1994, 59, 2729-2732.	
	DK	SCHINAZI <i>et al.</i> , "Selective Inhibition of Human Immunodeficiency Viruses by Racemates and Enantiomers of <i>cis</i> -5-Fluoro-1-[2-(Hydroxymethyl)-1,3-Oxathiolan-5-yl]Cytosine," <i>Antimicrobial Agents and Chemotherapy</i> , 1992, 36 (11), 2423-2431.	
	DL	SIH <i>et al.</i> , "Resolution of Enantiomers via Biocatalysis," <i>Topics in Stereochemistry</i> , 1989, 63-125.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/585,166
				Filing Date	June 1, 2000
				First Named Inventor	Yao Yiming <i>et al.</i>
				Group Art Unit	
				Examiner Name	
				Attorney Docket Number	04674.105060 (ALTUS)
Sheet	5	of	5		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T ⁶
	EA	TOONE <i>et al.</i> , "Enzymes in Organic Synthesis 49. Resolution of Racemic Monocyclic Esters with Pig Liver Esterase," <i>Tetrahedron: Asymmetry</i> , 1991, 2 (3), 207-222.		
	EB	TOONE <i>et al.</i> , "Enzymes in Organic Synthesis 50. Probing the Dimensions of the Large Hydrophobic Binding Region of the Active Site of Pig Liver Esterase Using Substituted Aryl Malonate Substrates," <i>Tetrahedron: Asymmetry</i> , 1991, 2 (10), 1041-1052.		
	EC	TOONE <i>et al.</i> , "Active-Site Model for Interpreting and Predicting the Specificity of Pig Liver Esterase," <i>J. Am. Chem. Soc.</i> , 1990, 112, 4946-4952.		
	ED	WHITESIDES <i>et al.</i> , "Enzymes as Catalysts in Synthetic Organic Chemistry," <i>Angew. Chem. Int. Ed. Eng.</i> , 1985, 24 (8), 617-653.		

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.